

Theme: Water and Health

Sustainable Sanitation Practises Integrating Water and Health

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Abstract

Every city suffers from water and sewerage management problems which finally lead to environmental degradation. Peri-urban areas are the worst polluted and disease ridden habitats of the world. Sewage discharges from centralized water-borne collection systems pollute surface water, and discharge from sewers, septic tanks and pit toilets pollute groundwater which directly affects the health of poor people at downstream.

Human health is impacted by unsafe drinking water and improper sanitation. Diseases related to polluted drinking water, unsanitary food preparation, improper excreta disposal and unclean household environments constitute to a major burden on the health of people in the developing world. Which further leads to ill-health in children. Diarrhoea and dysentery alone strike young children which annually kill over 2 million before their fifth birthday. Sustainable Sanitation interventions, however, can reduce the incidence of certain illnesses by 20% to 80% by inhibiting disease generation, interrupting disease transmission and reducing disease exposure.

To overcome on these water and health problems , Sustainable sanitation could be the best to improve access to safe and sufficient water supply; to encourage the sanitary disposal of human excreta and household wastes; to recover completely all nutrients from faeces, urine and gray water, to close the loops and to reuse nutrients, water and energy; and to change human behaviours through hygiene education.

Key words: Sustainable sanitation, water, health, hygiene, Education

INTRODUCTION

It is currently estimated that 1.1 billion people in the world lack access to improved water supplies and 2.6 billion people lack adequate sanitation (UNICEF et al. 2004). The global health burden associated with these conditions is staggering, with an estimated 4000–6000 children dying each day from diseases associated with lack of access to safe drinking water, inadequate sanitation and poor hygiene (WSSCC 2004). The UN Millennium Development Goals (MDG) aims to reduce by half the proportion of people without sustainable access to safe drinking water and basic sanitation by the year 2015. Although, some parts of the world are making encouraging progress in meeting these goals. Lack of access to improved drinking water is still a serious problem in large portions of Asia where an estimated 675 million people are without improved drinking water sources (UNICEF et al. 2004). To meet the MDG for sanitation alone implies that sanitation must be provided for approximately 2.1 billion people from 2002 to 2015 when adjusting for population growth.

Meeting the MDGs for water and sanitation in the next decade will require substantial economic resources, sustainable technological solutions and courageous political will. We must not only provide “improved” water and “basic” sanitation to those who currently lack these fundamental services, but also to ensure that these services provide:

- Safe drinking water,
- Adequate quantities of water for health, hygiene, agriculture and development
- Sustainable sanitation approaches to protect health and the environment.

.As we move forward to meet this challenge, it is critical that we learn from past mistakes and identify creative new approaches to provide sustainable water and sanitation. This paper will review sustainable sanitation approach towards water and health. Provision of safe, ecological sanitation, sustainable water and sanitation approaches for environment, and make recommendations for research and policy.

BACKGROUND

Freshwater is a finite global resource. Water is a basic requirement for the human body. The available quantity of freshwater is linked to human health in several ways; water for ingestion, water for hygiene and water for food production.

“Waterborne” diseases are actually “water-washed” diseases due to inadequate quantities of water available for washing hands, food, laundry, and cooking utensils (Bradley 1977). The appropriate intervention to prevent these diseases, such as shigellosis, trachoma and scabies, is to provide more water quantity. The contamination of water can involve bacterial, viral or protozoan organisms. Water born diseases include Cholera, dysentery,

Diarrhea. Proper sanitation is needed to maintain the visual clarity of water and to prevent the transmission of infectious diseases.

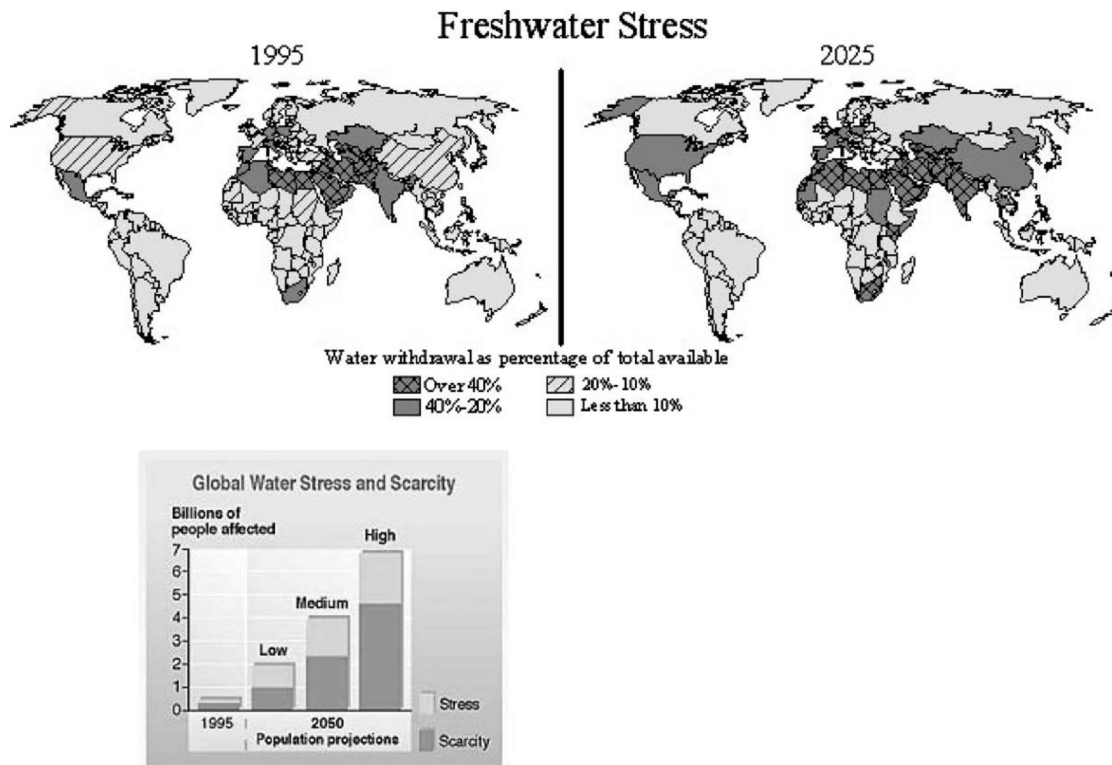


Fig 1: Predicted freshwater scarcity by geographic region (b) Estimated global population affected by water scarcity and water stress. Adapted from: www.unep.org/vitalwater/21.htm (UNEP 2002).

Disparities in water and sanitation access

The global burden of poor access to safe water and sanitation falls primarily on the poorest of the poor. Estimated coverage of improved water and sanitation is 79% and 49% respectively in the low and middle-income countries, compared to 98% for both in high-income countries.

Water Scarcity and Health

Lack of safe water to meet daily needs is a reality for many people around the world and has serious health consequences. The situation is getting worse due to population growth, urbanization and increased domestic and industrial water use. The health consequences of water scarcity include diarrhoeal diseases such as cholera, typhoid fever, salmonellosis, other gastrointestinal viruses, and dysentery. Thus to overcome on these water scarcity and health issues , research is required in three main areas : increasing efficiency of domestic water use, developing technology for implementing and monitoring safe water reuse and economic policies to promote effective water conservation. Epidemiologic studies of the possible health risks associated with potable water reuse and the use of

wastewater for agriculture are clearly needed in order to better understand how to protect public health, as these practices become more widespread.

CONCLUSION

In order to reach the MDGs and achieve sustainability in the field of wastewater management and sanitation, a new paradigm is clearly needed. Ecological sanitation offers an alternative solution to the intractable problem of providing sustainable sanitation systems to the still unserved half of humanity, particularly those who reside in urban settings where conventional approaches are neither available nor affordable.

These alternative systems are designed on the cyclical principles of natural ecosystems. External inputs into the system, like water, and "wastes" that exit the system, like nutrients, are reduced to a minimum or eliminated entirely. Ecological toilets are designed to destroy the pathogens close to where people excrete them, use no or very little water, and recover and recycle nutrients.

Ecological sanitation helps to solve society's most pressing problems - infectious disease, environmental degradation, water scarcity and promotes the need to recover and recycle nutrients for plant growth. In doing so, it also helps to restore soil fertility, conserve fresh water and protect marine environments - all of which contribute toward food security. Ecological sanitation approaches foster local initiatives and leadership, including the establishment of labor-intensive workshops that manufacture urine-diverting toilets, community-based composting centers and home and community organic gardens.

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